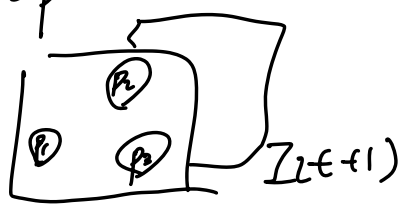
optical Flow



→ optical flow

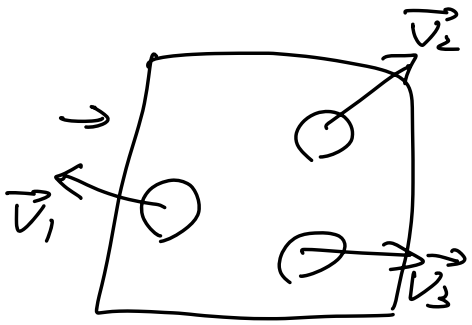


Image I(t)

Velocity vetors

Object $\{P_i\}$ $\{\vec{V}_i\}$

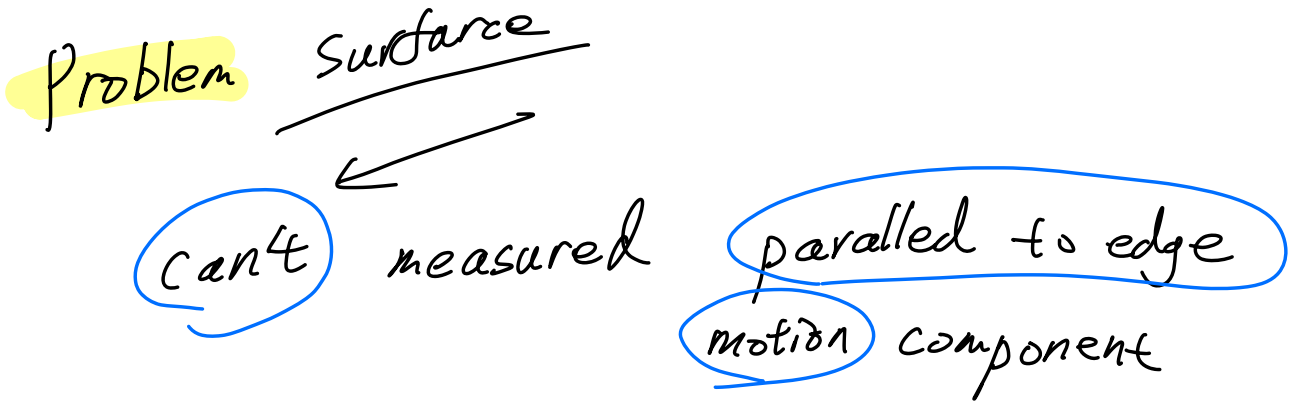
2D projection of physical movement of points

Assumptions
- Spatial coherence
- temporal persistence
- Brightness Constancy Constraint

$$I(x, y, t) = I(x+\delta x, y+\delta y, t+\delta t)$$

$$\frac{\partial I}{\partial x}\delta x + \frac{\partial I}{\partial y}\delta y + \frac{\partial I}{\partial t}\delta t = 0$$

$$\frac{\partial I}{\partial x}\frac{\partial x}{\partial t} + \frac{\partial I}{\partial y}\frac{\partial y}{\partial t} + \frac{\partial I}{\partial t} = 0$$


Problem
surface
can't
measured
parallel to edge
motion
component